THE COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION

WATER RESOURCES COMMISSION DECISION

Interbasin Transfer Application
Plainville Water Department
Lake Mirimichi Well Field

March 11, 2004

DECISION

On March 11, 2004, the Water Resources Commission, by a unanimous vote of those present, approved Plainville's request to develop a wellfield at Lake Mirimichi. This vote was taken after a review of the facts provided by the applicant, analysis of the associated data, and consideration of public and agency comments concerning this proposal.

BACKGROUND

On October 1, 2003, the Massachusetts Water Resources Commission received a request for approval of an action to increase the present rate of interbasin transfer under the Interbasin Transfer Act (M.G.L. Chapter 21 §§ 8B-8D) from the Town of Plainville Water Department. The WRC accepted the application as complete on November 13, 2003. Two public hearings, as required by the regulations, were held on December 18, 2003.

A Staff Recommendation to approve the proposal was presented to the WRC on January 8, 2004. An additional public hearing to receive comments on the January 8, 2004 Staff Recommendation was held on January 15, 2004. Responses to comments received through the public hearing process are available in a separate report.

The merits of the proposal were discussed at the February 12, 2004 WRC meeting. **At the March 11, 2004 meeting, the Water Resources Commission voted unanimously (7-0) to approve the Town of Plainville's request to develop a wellfield at Lake Mirimichi under the Interbasin Transfer Act.**

FACTS PERTAINING TO THE APPLICATION

1. The proponent filed an ENF for this project in April 1998, before the MEPA regulations were revised to require significant interbasin transfer applications to file an Environmental Impact Report (EIR). Therefore, an EIR was not required for this application.[1] The Secretary's Certificate on the ENF was issued on May 22, 1998.
2. Plainville is proposing to develop three new gravel-packed wells in a sand and gravel aquifer near Lake Mirimichi in the Taunton River basin (Figure 1).
3. Plainville has land area within the Taunton, Blackstone and Ten Mile River basins.
4. Plainville currently has three water supply wells located on Turnpike Lake in the Taunton River basin and one wellfield in the Ten Mile River basin. The existing wells have high iron and manganese concentrations and, as a result, have reduced capacities. There is a VOC contaminant threat down gradient of the wellfield in the Ten Mile River basin. This has resulted in DEP restricting use of the Ten Mile River basin wells to 200 gallons per minute (gpm) for 12 hours per day. Industrial contamination problems are present in other areas of the town.
5. The Town is applying for permission to transfer water from the Lake Mirimichi wells in the Taunton River basin section of town, to be used within the town, and discharged as wastewater to the North Attleborough Wastewater Treatment plant in the Ten Mile River basin.
6. The Interbasin Transfer Act is triggered because water from this source will cross a basin line and a town line.
7. DEP approved the Lake Mirimichi wells for a combined withdrawal of 0.4 million gallons per day (mgd).

EVALUATION OF THE PROPOSED INTERBASIN TRANSFER

This Interbasin Transfer application was reviewed on its own merits. The decision is made on facts relevant to the Interbasin Transfer Act and its regulations. The application was evaluated against the eight criteria outlined in the regulations (313 CMR 4.05), as well as the Interbasin Transfer Act Performance Standards and with consideration of comments received through the public comment process.

SYNOPSIS OF THE EVALUATION CRITERIA (313 CMR 4.05)

Criteria	Application Meets?
Criterion #1: MEPA Compliance	Yes
Criterion #2: Viable In-Basin Sources	Yes
Criterion #3: Water Conservation	Yes
Criterion #4: Forestry Management	Not Applicable
Criterion #5: Reasonable Instream Flow	Yes, with conditions
Criterion #6: Groundwater/Pumping Test	Yes
Criterion #7: Local Water Resources Management Plan	Yes
Criterion #8: Cumulative Impacts	Yes

[1] The MEPA program has confirmed this.

Figure 1


Proposed Plainville
Lake Mirimichi Wellfield
Lake Mirimichi
Dams
Proposed Wells
Taunton
River Basin
Blake's Pond Source
Ten Mile
River Basin
Taunton
River Basin
North Attleboro
Sewage Disposal
0
0.5
1
1.5
2
2.5
Miles
N

BASIS FOR THE DECISION

The application and associated data were subject to careful review and analysis. It was reviewed by the Department of Conservation and Recreation's Office of Water Resources,, Department of Environmental Protection's Division of Watershed Permitting and Southeast Regional Office, the Department of Fish and Game's Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program and Riverways Program. Consideration was given to the public and agency comments received concerning this proposal. Plainville and its consultants have worked closely with the agencies to provide the required information. This Decision was made after an extensive evaluation of the project and of Plainville's compliance with the seven applicable criteria of the Interbasin Transfer Act regulations. Plainville's request meets all applicable criteria of the Interbasin Transfer Act and its regulations. Potential environmental impacts can be mitigated by conditions limiting the withdrawal.

The following section describes compliance with the criteria.

Criterion #1 MEPA Compliance
The project received MEPA review in 1998 (EOEA #11590). At that time, the MEPA regulations did not require an EIR for every "significant" application for Interbasin Transfer review. Therefore, an environmental review, pursuant to Sections 61 & 62H, inclusive, of Chapter 30, was not required for this proposed action. The MEPA program was consulted and confirmed that this is the case.

Criterion #2 Viable In-Basin Sources
Plainville has spent considerable time and money searching within its borders for reliable sources of water supply. Based on the information available to date, there are no local water supply sources available to the Town. DEP concurs with this assessment.

Criterion #3 Water Conservation
Plainville's water conservation program meets all of the 1992 Water Conservation Standards for the Commonwealth of Massachusetts and the 1999 IBT Performance Standards for Criterion #3. Currently, Plainville bills its large customers monthly and others semi-annually. However, the Water Department is changing over to radio frequency meters, which will allow for quarterly meter reading and billing. These meters should be in operation by the spring of 2004. In addition, the Water Department has developed a drought management plan and a plan targeting large users for water conservation. The Plainville Water Commission approved these plans on January 14, 2003. Table 1 lists Plainville's water conservation accomplishments with respect to all of the standards.

Table 1
Plainville's Conservation Achievements

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Public Education	Active Public Education Program in place which should include: - Targeting largest users - School program - Bill stuffers or worksheet to calculate water use - Advertising/media stories - Conservation information centers - Speakers - PSAs etc - Promoting use of water saving devices - Civic/professional resources - Special events - Multilingual materials (as needed) - Contests/recogni-tion	A broad-based public education program which attempts to reach every user at least two times per year - refer to the WRC's 1992 "Water Conservation Standards for the Commonwealth of Massachusetts" and the Massachusetts Water Works Association for recommended public education measures Targeting largest users	• Sends bill stuffers once per year • PSAs on cable television • A CAC was formed to assist with implementation of conservation programs and out reach Plainville is implementing the program to target large users, recently approved by the Water Commission.	Yes

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARD?
Leak Detection and Repair	Full Leak Detection survey every two years Include in full cost pricing	Full Leak Detection survey within the previous two years of the application Documentation of survey and of leaks identified and repaired Completed by methods at least as comprehensive as the MWRA's regulations for leak detection	Last survey was conducted in 2002; Next survey scheduled for 2004 Included in full cost pricing Documentation was provided Completed by methods at least as comprehensive as the MWRA's regulations for leak detection	Yes

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Metering	100% Metering Regular maintenance, calibration, testing and repair program All public buildings should be metered Quarterly billing, based on actual meter readings Master meters calibrated annually	100% Metering Regular maintenance, calibration, testing and repair program; description of program included in application All public buildings should be metered Quarterly billing, based on actual meter readings; bills should be easily understood by customer Master meters calibrated annually; documentation of annual master meter calibration	100% Metered Plainville will have changed over to radio frequency meters by Spring 2004. This will better allow the Town to conduct a regular testing program. All public buildings are metered Large customers are billed monthly; others semi-annually. The change over to radio frequency meters will allow for quarterly meter reading and billing. Master meters are calibrated annually; documentation of annual master meter calibration was provided	Yes

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Pricing	Full cost pricing Enterprise accounts Regular evaluation of rate structure	Documentation of full cost pricing Rate structure must encourage water conservation	Plainville has an Enterprise Account Rate Structure ($6.00/1000 gallons) encourages water conservation Rate Structure is evaluated regularly; the last change was 7-1-2001	Yes

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Residential water use	Make water saving plumbing devices available to residential customers	If the community's residential gallons per capita/day is greater than 65, the proponent should be implementing a comprehensive residential conservation program that seeks to reduce residential water use through a retrofit, rebate or other similarly effective program for encouraging installation of household water saving devices, including faucet aerators, showerheads and toilets and through efforts to reduce excessive outdoor water use.	Residential gpcd is 55	Yes
	Strictly enforce State plumbing code		The plumbing code is strictly enforced by the building inspector	

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Public sector water use	All public buildings metered and water use accounted for	All public buildings should be metered	All public buildings are metered and the water use is accounted for	Yes
	Retrofit all public buildings with low-flow devices	Retrofit all public buildings with low-flow devices	All public buildings have been retrofit with low-flow devices	
	Meter hydrants used for pipe flushing and construction; charge for use		Plainville does not allow hydrants to be used for pipe flushing and construction	
	Water audit every 3-5 years	Proponents should provide records of water audits conducted on public facilities. The most recent audit should have occurred within two years prior to the application for Interbasin Transfer approval.	A water audit is scheduled for July 2004; Plainville conducts informal water audits at each billing cycle. After the meters are read, but before bills are sent out, the billing software identifies volumes that are significantly higher or lower. Meters are then reread.	
	Strictly enforce State plumbing code		The plumbing code is strictly enforced by the building inspector	

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Water Supply System Management	Drought management plan Strategies to reduce peak daily and seasonal peak demands	Drought/emergency contingency plan, to include: - seasonal use guidelines - measures for voluntary and mandatory water use restrictions and describe how these will be implemented - tie water use restrictions to streamflow and/or surface water levels in the affected basin(s) where this information is available	Plainville has a written emergency plan and a draft drought plan.	Yes
	Update all water uses/plan to reduce unaccounted-for water	Unaccounted-for water should be at 10% or less	Unaccounted-for water was 7.2% in 2002	
	Develop interconnections with other systems		Plainville has interconnections with North Attleborough and Foxborough	

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Other		A program of land use controls to protect existing water supply sources of the receiving area that meet the requirements of the Department of Environmental Protection.	Plainville is in compliance with DEP's wellhead protection regulations. Documentation from DEP stating this, was provided in the application	Yes
		A long-term water conservation program which complies with the 1992 Water Conservation Standards for the Commonwealth of Massachusetts should be in place.	Plainville's long-term water conservation program complies with the 1992 Water Conservation Standards for the Commonwealth of Massachusetts	Yes

CONSERVATION MEASURE	1992 STANDARD (AMENDED 2002)	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Lawn and Landscape Water Conservation	Communities and public and private water suppliers should develop drought management plans that identify water supply and environmental indicators to serve as drought stage triggers and that outline a set of increasingly stringent water use restrictions that are designed to protect public health and the environment and that can be implemented through bylaw, ordinance or regulation.		Plainville's draft drought plan has triggers to reduce pumping and implement water conservation measures tied to the state drought plan triggers	Yes
	Communities and public and private water suppliers should implement a water use restriction bylaw, ordinance or regulation that provides the community or water supplier with the ability to implement mandatory water use restrictions. These restrictions should be tied to environmental and water supply indicators as outlined in a drought management plan.		Plainville's by-law provides the community or water supplier with the ability to implement mandatory water use restrictions and issue fines for noncompliance	Yes

Criterion #5 Reasonable Instream Flow

The Interbasin Transfer Act regulations (313 CMR 4.05) direct the WRC to consider that "reasonable instream flow in the river from which the water is transferred is maintained" in making its decision to approve or deny an Interbasin Transfer request. In this case, the WRC evaluated the impacts of transferring 0.4 mgd from the Taunton River basin on Lake Mirimichi and to flows downstream in the Wading River.

The proposed wells are located adjacent to Lake Mirimichi in Plainville, which is used by the Town of Attleboro for its public water supply. The Lake is dammed on its east side. Attleboro releases water from Lake Mirimichi to the Wading River as needed and withdraws the water at a location near Blake's Pond (an impoundment on the Wading River) approximately two miles downstream. The water is pumped through filter beds adjacent to the Wading River. At times, water flows uncontrolled over the Lake Mirimichi dam. There is also a dam on Robinson Pond between Lake Mirimichi and Blake's Pond. Attleboro's use of this system was authorized, and facilities installed and useable prior to the effective date of the Interbasin Transfer Act (March 8, 1984) and therefore are not currently jurisdictional under the Interbasin Transfer Act. Attleboro is not required to maintain minimum or seasonal releases from Lake Mirimichi and operates its system under a Water Management Act registration. For approximately the past ten years, Attleboro has monitored and recorded water levels and gate valve openings at Lake Mirimichi on a weekly interval.

A pumping test was performed on the proposed wells in 1997. For the purposes of interbasin transfer analysis, it was assumed that all of the water pumped by the wells would be lost from Lake Mirimichi. The wells are constructed in a relatively thin sand layer (approximately 20 to 30 feet in depth) above bedrock and are approximately 250 feet from the shore of Lake Mirimichi. Although the water pumped by the wells was discharged into Lake Mirimichi during the pumping test, the lake level declined during the pumping test. This was because Attleboro was releasing water through the dam during the test. A hydraulic connection between the lake and the wells is likely present given the geology, and it appears that water withdrawn from the wells would either derive as induced infiltration from the lake or from ground water that is intercepted en-route to its natural discharge to the lake.

The wells' location adjacent to Lake Mirimichi required analysis of potential impacts on lake levels. In addition, since flow to the Wading River is dependent upon releases from Lake Mirimichi made by Attleboro, the applicant was asked to simulate the impacts of well withdrawals on releases from Lake Mirimichi to the Wading River, based upon available data from Attleboro's monitoring record.

In summary, the following was found regarding impacts on instream flow criteria with respect to proposed withdrawals from Plainville's Lake Mirimichi wells:

- ***Under current conditions, monthly average releases from Lake Mirimichi exhibit a normal seasonal hydrograph with monthly average values that are consistent with the US Fish & Wildlife Aquatic Base Flow (ABF) criteria;***
- ***On a monthly basis, the impact of the proposed Plainville wells will not significantly alter the hydrograph and the ABF values will be maintained;***
- ***In a condition of normal precipitation, the additional withdrawals from the proposed Plainville wells would cause a reduction in Wading River flow of 5 percent;***
- ***Impacts to ground water levels associated with the proposed well withdrawals are not expected to be significant;***
- ***In a normal precipitation condition, the addition of the proposed Plainville wells would cause Lake Mirimichi level to fall below the spillway an additional 2 days per year, and decline to a maximum of 0.1 foot below the spillway;***
- ***In a moderate drought, the addition of the proposed Plainville wells would cause the lake level to decline below the spillway for 14 additional days; the lake level would decline by an additional 0.6 foot beyond existing conditions;***
- ***Many fish species are present in Lake Mirimichi and the Wading River; impacts to fish from the proposed withdrawal are not expected to be significant;***
- ***Recreational uses of Lake Mirimichi are not expected to be significantly impacted by the proposed withdrawal;***
- ***Impacts to wetlands associated with the proposed withdrawals are not expected to be significant;***
- ***Impacts to Lake Mirimichi water levels can be controlled by ceasing well withdrawals when the lake reaches threshold levels consistent with those observed during the moderate drought of 1995; and***
- ***It is expected that the proposed Plainville wells can operate 93 percent of the time without shutting off under the proposed threshold levels.***

Hydrologic Analysis

Impacts to Wading River Flow

Analysis of impacts to instream flow in the Wading River was complicated by Attleboro's Lake Mirimichi operations and downstream withdrawals. The nearest USGS flow measurement gage downstream of Lake Mirimichi and the proposed well site is located in West Mansfield but had a truncated period of record (1953-1986) that did not correspond with Attleboro's Lake Mirimichi measurements. Thus, data from the Wading River further downstream at a USGS gage in Norton (1925 to 2001) were used in the IBT analysis. The applicant prepared simulations of flow in the Wading River with and without the well operation, and with and without Attleboro's operations. These simulations were used to indicate the magnitude of impact that the Plainville wells would have on flow in the Wading River. Because flow measurements are not made at the Lake Mirimichi dam, the applicant developed equations to estimate the releases made through the gate valve at the dam as well as flow over the dam. Although the equations may not provide an exact representation of the flow through the dam gate**,** particularly at low flows, the analysis is a reasonable evaluation of the impacts of well withdrawals on the releases from Lake Mirimichi. This Decision proposes thresholds on Lake Mirimichi levels at which well operation would cease until lake levels recover. These thresholds will protect both Lake Mirimichi and flow to the Wading River.

A series of hydrographs were developed for the period of 1990 to 2001, the period of available data. This data set contains wet and dry years. In particular, water year 1995 was relatively dry. The precipitation for water year 1995 was within the lowest quartile of record for Attleboro and considered representative of a moderate drought. Precipitation totals for the summers (June through September) of 1993 and 1997 were in the lowest quartile for the period of record of these months. Precipitation totals in water years 1990, 1996, and 1998 were in the highest quartile of record for Attleboro. Taken as a whole, the period exhibited 104 percent of normal precipitation. Therefore, the 1990 to 2001 data set covers a range of conditions and is considered valid for analysis of interbasin transfer environmental criteria.

In accordance with interbasin transfer evaluation criteria, the applicant determined the impact of the well withdrawals on Wading River flows. This analysis was based upon flow reductions at the Lake Mirimichi dam compared with the 1990 to 2001 flows, estimated from weekly Lake Mirimichi water levels measured by Attleboro (i.e., the impacts were determined compared to the condition of Attleboro's existing operations). A reduction of 0.62 cfs, equivalent to the proposed well withdrawal of 400,000 gpd was subtracted from the estimated flows and the results were compared.

The situation is complex considering Attleboro's control and regulation of the Lake Mirimichi releases. The applicant's simulation was performed using a daily time step. Daily releases from the lake were shown to vary considerably, and can be high during summer months when Attleboro needs water for its public water supply system. (This also results in some relatively high summer flows from Lake Mirimichi to the Wading River.) Although Plainville's wells have a hydraulic connection to Lake Mirimichi, and will intercept Lake Mirimichi recharge, the impacts of pumping withdrawals to releases from Lake Mirimichi will not be immediate because Attleboro's control of the Lake Mirimichi dam will likely have a more direct impact. Also, the

Lake Mirimichi reservoir provides a large amount of water storage, which will mitigate impacts of ground water withdrawals on Wading River flows. It appears appropriate to consider impacts of well withdrawals on a monthly time step, especially considering the daily release fluctuations that Attleboro can impose on the lake.

Figure 2 depicts simulations of average monthly releases from Lake Mirimichi under various withdrawal scenarios for the period of 1990-2001. When grouped as monthly averages, differences between the existing releases from Lake Mirimichi and the releases with the Plainville wells do not appear very significant. The figure shows that on average, a normal seasonal hydrograph occurs under both current operations and under the proposed Plainville well withdrawals. Minimum flows occur in the summer months, moderate flows occur during fall and winter months, and maximum releases occur in March and April. Further review of the data indicates the following, for both current conditions and simulations of the proposed withdrawals from the Plainville wells:

- Summer releases from Lake Mirimichi are estimated to be above the US Fish & Wildlife Aquatic Base Flow (ABF) standard of 0.5 cubic feet per square mile of drainage area (cfsm).
- Winter flows (December through February) are above the ABF value of 1.0 cfsm.
- Spring releases in March and April are between 2.5 and 3.5 cfsm, below the ABF value of 4.0 cfsm, but this may be a result of the site's location in an area that does not get as much snowfall (and therefore spring runoff) as northern parts of New England. The March and April values appear to be consistent with other rivers in this area that are not subject to regulation.

Overall, the simulations indicate that the impact of operating the Plainville wells would cause an 8 percent reduction in flow to the Wading River from Lake Mirimichi on average for the simulation period of 1990-2001. (Conditions are proposed to mitigate impacts during dry years.)

An example of simulated monthly average conditions using the near-normal precipitation water year 2000 is shown in Figure 3. The reduction in monthly releases for water year 2000 would be 5 percent on average. The greatest amount of impact would have been in the month of August, when the release from Lake Mirimichi is simulated to be reduced from 5.68 cfs to 4.35 cfs. In actuality, if Attleboro required additional water downstream for its water supply, the releases would be increased. The graph depicting average monthly releases for water year 1995 (Figure 3) shows the error associated with calculations at low flows. The months of August and September 1995 show higher flows with additional withdrawals from the wells, than the flows under current conditions with Attleboro's operations. The effect of these errors is not significant, in part because of the proposed conditions that will eliminate the impacts of Plainville's well use when Lake Mirimichi levels decline.

The applicant calculated 95% exceedance flows for the outlet of Lake Mirimichi. The results of the analysis indicated that with Attleboro's manipulation and without the proposed wells, the 95% exceedance flow would be 1.45 cfs. The well withdrawal of 0.62 cfs would represent 43% of the 95% exceedance flow. Although the proportion appears high, Attleboro will continue to control releases from Lake Mirimichi as needed to supply its downstream withdrawals and under

the proposed approval conditions (described later in this document), Plainville would be limited from operating the wells when Lake Mirimichi levels are low. Therefore, these potential reductions from use of the Plainville wells will not be allowed to occur.

Determination of impacts to the seven-day low flow with 10-year recurrence interval (7Q10) was not applicable to the proposed wells, since there are no wastewater discharges relying on 7Q10 flow for dilution downstream.

Impacts to Lake Mirimichi

The proposed Plainville wells are situated in the headwaters of the Taunton River basin. The drainage area to Lake Mirimichi is approximately 12 square miles. The lake itself is 170 acres in area. The lake is up to 20 feet deep on its eastern side, but is less than five feet deep on its west side, adjacent to the proposed wells. Within approximately 45 feet of the shoreline on the west side, the lake is only three feet deep. Lake Mirimichi, when full, holds approximately 330 million gallons.

The applicant established a lake level and storage relationship, as well as a water balance to simulate lake levels and the impacts that would be caused by proposed well withdrawals for the 1990 to 2001 period. Lake levels were simulated for conditions with and without Attleboro's withdrawals and with and without the well withdrawals.

The results of the water level analysis indicated that in a "normal" precipitation condition (water year 2000), and with Attleboro's manipulation only, the water level in Lake Mirimichi would fall below the spillway for four days (July 13 to July 18). In actuality, the only time that the lake level fell below the spillway during water year 2000 was in response to Attleboro opening the valve between July 14 and July 16, 2000. When the proposed well withdrawal is added, the lake level would decline below the spillway by two additional days, and result in a total loss of 1 percent of lake volume. The reduction of lake perimeter is estimated at 170 feet, less than 1 percent. The lake level would decline by a maximum of 0.1 foot with both Attleboro's operation and the proposed Plainville wells. The applicant estimated that under normal precipitation conditions, without any manipulation, the lake would decline below the spillway for 2 days.

Table 2. Water Year 2000 Simulated Impacts on Lake Mirimichi (Normal Conditions)

	Without Attleboro or Plainville wells	Attleboro only	Plainville Wells Only	Attleboro and Plainville wells
Number of Days Below Spillway	2	4	5	6
Maximum Depth Reduction (feet)	0.03	0.07	0.03	0.10
Maximum Volume Reduction (%)	0.1%	0.7%	0.4%	1.3%
Maximum Surface Area Reduction (%)	0.56%	0.38%	0.18%	0.18%
Maximum Perimeter Reduction (%)	0.52%	0.35%	0.17%	0.17%

The applicant simulated lake levels during a moderate drought, represented by water year 1995. Precipitation data from Attleboro suggest that the dry conditions of water year 1995 were within the lowest quartile of record for Attleboro and were closest to water year 1981 in Attleboro for the 1990 to 2001 analysis period. Because water level impacts extended beyond the end of the water year (September 30, 1995), the statistics for this analysis will be described for the calendar year of 1995. Without any manipulation, the water level is estimated to be below the spillway for 86 days and to decline by a maximum of 0.6 feet below the dam spillway. The lake volume would be reduced by a maximum of 9 percent and the surface area would decline by a maximum of 3 percent. With Attleboro's manipulations and without the proposed wells, the water level is simulated to be below the spillway for 99 days, and the water level would decline by a maximum of 2.2 feet (a volume loss of 35 percent, surface area decline of 13 percent). The addition of the wells, without the recommended restrictions, would have added 14 days when the water level would remain below the spillway and cause an additional 0.6 foot of water level decline beyond the impacts of Attleboro's withdrawals (maximum), and an additional loss of 10 percent of full lake volume (for a total of 45 percent lake volume loss and 16 percent of surface area at the maximum impact). This would be an unacceptable impact.

Table 3. 1995 Simulated Impacts to Lake Mirimichi (Moderate Drought Conditions)

	Without Attleboro or Plainville wells	Attleboro only	Plainville Wells Only	Attleboro and Plainville wells
Number of Days Below Spillway	86	99	89	113
Maximum Depth Reduction (feet)	0.56	2.20	1.12	2.79
Maximum Volume Reduction (%)	8.7%	35%	18%	45%
Maximum Surface Area Reduction (%)	3.2%	13%	6.4%	16%
Maximum Perimeter Reduction (%)	3.0%	11%	5.8%	14%

Graphical analyses of simulated water level declines in Lake Mirimichi illustrate the conditions expected in both normal years (2000), and dry years (1995, **Figure 4**). As shown in Table 2, in normal years water levels in Lake Mirimichi would not be significantly impacted by the proposed well withdrawals. During dry years, however, the lake levels are already significantly impacted by Attleboro's operations and would be further exacerbated by the proposed wells. Water level impacts are most pronounced when precipitation deficits occur during the high water use summer period.

To prevent excessive impacts to Lake Mirimichi water levels, thresholds for well use will be required. When Lake Mirimichi levels decline below the levels experienced during the 1995 drought (2.00 feet, observed between August 31 and September 15, 1995) operation of the Plainville wells will cease. Plainville will be required to monitor Lake Mirimichi water levels to determine when the threshold is reached. Pumping from the Lake Mirimichi wells must be reduced when the threshold is approached. When the lake level recovers, it should be allowed to rebound above the threshold before pumping the wells at their full capacity is resumed (see conditions).

Based upon the results of Plainville's simulations, the Lake Mirimichi wells could have been used 93 percent of the time for the period of 1990-2001 using this threshold. Shut-offs would have occurred for a total of 282 days during the entire simulation period of 1990 through 2001, and would have occurred between July and November 1993; August and September 1995; September and November 1997; and August to September 1999. During the moderate drought of 1995, the threshold would have prevented use of the wells for 34 days, between August 21 and September 24.

Impacts on Ground Water Level

Drawdown of the water table associated with the July 1997 pumping test was reportedly a maximum of 3.5 feet surrounding the pumping wells and diminished to 0.5 feet adjacent to Lake

Mirimichi. The pumping test was performed at a combined rate of 300 gallons per minute (gpm, or 432,000 GPD), and the test stabilized. Therefore, the conditions observed during the pumping test are equivalent to those expected long-term. Zone II model results for the wellfield do not indicate additional significant water table draw down surrounding the wellfield. Therefore, no significant impact to the water table is expected as a result of the well withdrawals. Well pumping capacities may decline during droughts and when Lake Mirimichi levels decline as a result of the lower water table during these periods.

Impacts to Other Uses

Fisheries
According to the Massachusetts Division of Fisheries and Wildlife (DFW), Lake Mirimichi is a typical warm water pond. In the past, it was stocked with bluegill (*Lepomis macrochirus*), smallmouth bass (*Micropterus dolomieu)*, black crappie (*Pomoxis nigromaculatus*) chain pickerel (*Esox niger*), yellow perch (*Perca flavescens*), white perch (*Morone americana*) and brown bullhead (*Ameriurus nebulosus*). It also provides habitat to banded sunfish (*Ennecanthus obesus*), bridle shiner (*Notropis bifrenatus*), creek chubsucker (*Erzmyzon oblongus*), golden shiner (*Notemigonus crysoleucas*), pumpkinseed (*Lepomis gibbosus*), and swamp darter (*Etheostoma fusiforme*).

The Wading River below Lake Mirimichi is stocked annually in the spring with trout. Fishery surveys have revealed that it also provides habitat to American eel (*Anguilla rostrata*), banded sunfish (*Ennecanthus obesus*), bluegill (*Lepomis macrochirus*), brown bullhead (*Ameriurus nebulosus*), brown trout (*Salmo truuta*) chain pickerel (*Esox niger*), common shiner (*Notropis cornutus*), creek chubsucker (*Erizmyzon oblongus*), fallfish (*Semotilus corporalis*), golden shiner (*Notemigonus crysoleucas*) largemouth bass (*Micropterus salmoides*), pumpkinseed (*Lepomis gibbosus*) redfin pickerel (*Esox americanus*) and white sucker (*Catastomus commersoni*).

According to DFW, the proposed withdrawal is not expected to affect the fishery resources of Lake Mirimichi. DFW requested that USFWS seasonal ABF flows be provided to the Wading River to maintain aquatic habitat. Plainville does not control releases from Lake Mirimichi to the Wading River, however. Attleboro controls the dam and operates its water system under a Water Management Act registration without release requirements. Attleboro's use of this source is not subject to this Interbasin Transfer review.

Hydropower
Not applicable

Recreation
There is some boating recreation on Lake Mirimichi. These uses will not be significantly affected by the proposed wells because Attleboro's operation of Lake Mirimichi is not expected to change significantly with the Plainville transfer. The decline of lake level during normal precipitation conditions is expected to be 0.1 foot, which should not impact recreation. Lake level declines caused by operation of the wells can be controlled by eliminating well use when threshold lake levels are reached; thus, the impacts on recreation associated with lake level can

be controlled and limited to those equivalent to that experienced in a moderate drought with Attleboro's current operations.

Wetlands
The applicant indicates that there is only a minimal vegetated wetland fringe around Lake Mirimichi. Wetlands are not present in the immediate vicinity of the proposed wells. Therefore there are no anticipated impacts to wetlands within the area of ground water depression.

Other than Lake Mirimichi itself, the only significant wetland in the area, which could be affected by the transfer is the Witch Pond Swamp in Foxborough. The Witch Pond Swamp appears to receive recharge from an underground hydraulic connection from Lake Mirimichi, as discussed by the WRC during its deliberations on the Mansfield Morrison Well and the Foxborough Witch Pond Wells IBT applications. Aerial photographs from the 1960's show that the Witch Pond Swamp did not dry up during the considerable drought of that period. Therefore, if Plainville's withdrawals are limited based upon water levels in Lake Mirimichi, the Witch Pond Swamp should not be affected by the proposed Plainville transfer.

Rare and Endangered Species
The Division of Fisheries and Wildlife Natural Heritage & Endangered Species Program reviewed the proposal and did not anticipate any adverse impacts to state-protected rare wildlife or plants pursuant to the Massachusetts Endangered Species Act regulations.

<u>WRC's Findings that a Reasonable Instream Flow will be Maintained</u>
The analyses of release data indicate there will be no significant change in the operation of Lake Mirimichi in response to the proposed Plainville transfer. Plainville does not control the operation of the Lake Mirimichi dam. The transfer under normal climate conditions will not unduly affect current resources. However, it is important to recognize that current conditions represent an impacted environment with respect to the amount of drawdown to Lake Mirimichi under drought conditions, flow releases, timing of releases, timing of spillway operations (which are indirectly determined by system operation) and maintaining steady flow. Attleboro's releases from Lake Mirimichi are not directly related to lake levels, but rather depend upon Attleboro's need to meet its water system demand. Attleboro's releases from Lake Mirimichi are directly related to water levels downstream at Blake's Pond. Therefore, Attleboro holds ultimate control over releases from Lake Mirimichi and Plainville's withdrawals will likely cause minimal impacts to releases. The WRC will require that Plainville's well operations be curtailed when Lake Mirimichi levels fall below those experienced during the moderate drought of 1995. Between August 31 and September 15, 1995, water levels at the Lake Mirimichi dam were recorded as 24 inches below the dam. This level is proposed as a threshold for ceasing well use. Based upon data provided in the application, it appears that the wells could have been used 93 percent of the time between 1990 and 2001 under this threshold.

Criterion #6. Ground Water/Pumping Test

A pumping test was performed on the proposed wells in 1997. The pumping test was run with all three wells operating between July 21 and July 26, 1997. The wells were pumped at a combined rate of 300 gpm, or 432,000 gallons per day (0.432 MGD). Stabilization occurred during the final 24 hours of the pumping test. The test resulted in approximately 3.5 feet of drawdown in the immediate vicinity of the pumping wells. The test data were analyzed to determine the wells' safe yield and a Zone II wellhead protection area was delineated using a ground water model. The pumping test and analyses are presented in "Report on Lake Mirimichi Wellfield Pumping Test, Plainville Water Department, Plainville, MA," by Dufresne-Henry dated November 1997. In a letter dated August 17, 1998, DEP allowed a safe yield of 278 gpm (400,320 gpd, 0.400 MGD) for the three wells combined. The pumping test report was utilized in review of this interbasin transfer application.

Criterion #7 Local Water Resources Management Plan

A Draft Local Water Resources Management Plan was submitted with the application. The draft addresses the issues identified in the 1999 Interbasin Transfer Act Performance Standards Appendix B Local Water Resources Management Plan Outline. Plainville has received comments and suggestions on the draft to clarify certain points.

Criterion #8 Cumulative Impacts

The agencies and members of the public have expressed concerns about the stressed nature of the subbasin where the proposed wellfield is located (Wading River at Mansfield subbasin of the Taunton River basin). The WRC's Stressed Basins in Massachusetts report has identified this subbasin as highly stressed. The DEM (now DCR) update to the Taunton River basin plan identified this subbasin as having no potential available yield in a moderate drought.

In order to address these concerns, an inflow/outflow analysis similar to that developed for the Taunton River basin plan and update, was conducted incorporating potential outflows from Plainville's proposed wellfield and inflows from the recently approved Mansfield Morrison Well and Foxborough Witch Pond wells. These latter wells have the potential to add flow to the unsewered areas of the subbasin located in these towns.

The results of this analysis demonstrated that use of the Plainville wellfield, combined with the inflows from the approved Mansfield and Foxborough sources, would not increase the stress level of the subbasin. This, combined with the storage capacity of Lake Mirimichi and the recommended restrictions on the use of this wellfield, will not result in significant cumulative impacts to the subbasin or the Taunton River basin as a whole.

OTHER ISSUES CONSIDERED

Because Plainville does not control Lake Mirimichi operations, the WRC recommends that Plainville and Attleboro work together in managing the area water resources to assure continuous, seasonally-appropriate releases from Lake Mirimichi to the Wading River and to

maintain environmentally appropriate water levels in Lake Mirimichi. The WRC further recommends that all the communities that rely on the resources of the Wading River subbasin join together to cooperate in the management of these resources to provide for a balance between water supply and environmental needs. Such a group could be modeled on the Canoe River Aquifer Advisory Committee.

EO 385

This Decision is consistent with Executive Order 385, which has the dual objective of resource protection and sustainable development. This Decision does not encourage growth in areas without adequate infrastructure nor does it cause a loss of environmental quality or resources.

CONDITIONS OF THE DECISION

Based on the analyses and concerns expressed about this project, approval of Plainville's application under the Interbasin Transfer Act for construction of the Lake Mirimichi wells is subject to the following conditions. **Plainville must commit in writing that it will abide by the conditions outline below:**

In order to fully comply with Criterion #2, that all reasonable efforts have been made to identify and develop all viable sources in the receiving area of the proposed interbasin transfer:

1. Plainville must maintain its existing local sources. If use of any existing source is to be abandoned by the town in the future, the Town must report this to the WRC.

In order to fully comply with Criterion #3, that all practical measures to conserve water have been taken in the receiving area:

1. Plainville must continue its demand management programs.
2. Plainville must provide the DEP Annual Statistical Reports to the WRC for the first five (5) years after the Town begins to operate the Lake Mirimichi wells, to determine if the programs in place are successful in keeping unaccounted-for water below 10% and residential gpcd at 65 or less.
3. If the amount of unaccounted-for water increases to greater than 10%, Plainville must either provide an explanation of why this has occurred (e.g. water main break/large fire, etc.) or provide a plan, for WRC approval, to reduce unaccounted-for water to acceptable levels.
4. If residential gpcd increases above 65, the Town must implement a comprehensive residential conservation program that seeks to reduce residential water use through a retrofit, rebate or other similarly effective program for encouraging installation of household water saving devices, including faucet aerators, showerheads and toilets and through efforts to reduce excessive outdoor water use, including the imposition of seasonal water use rates. If this occurs, the Town must provide a plan for this program to the WRC for approval.
5. Before the wellfield is operated, Plainville must provide documentation that the meter changeover has been completed and implement quarterly billing.

6. Before the wellfield is operated, Plainville must provide documentation that the large user water conservation program has been approved and implemented.
7. Before the wellfield is operated, Plainville must provide documentation that the drought plan has been approved.

In order to fully comply with Criterion #5, that reasonable instream flow in the river from which the water is transferred is maintained (environmental impacts):

To prevent excessive draw down of Lake Mirimichi and to preserve availability of water for releases from Lake Mirimichi to the Wading River, the following conditions are recommended for restricting operation of the Plainville Lake Mirimichi wells:

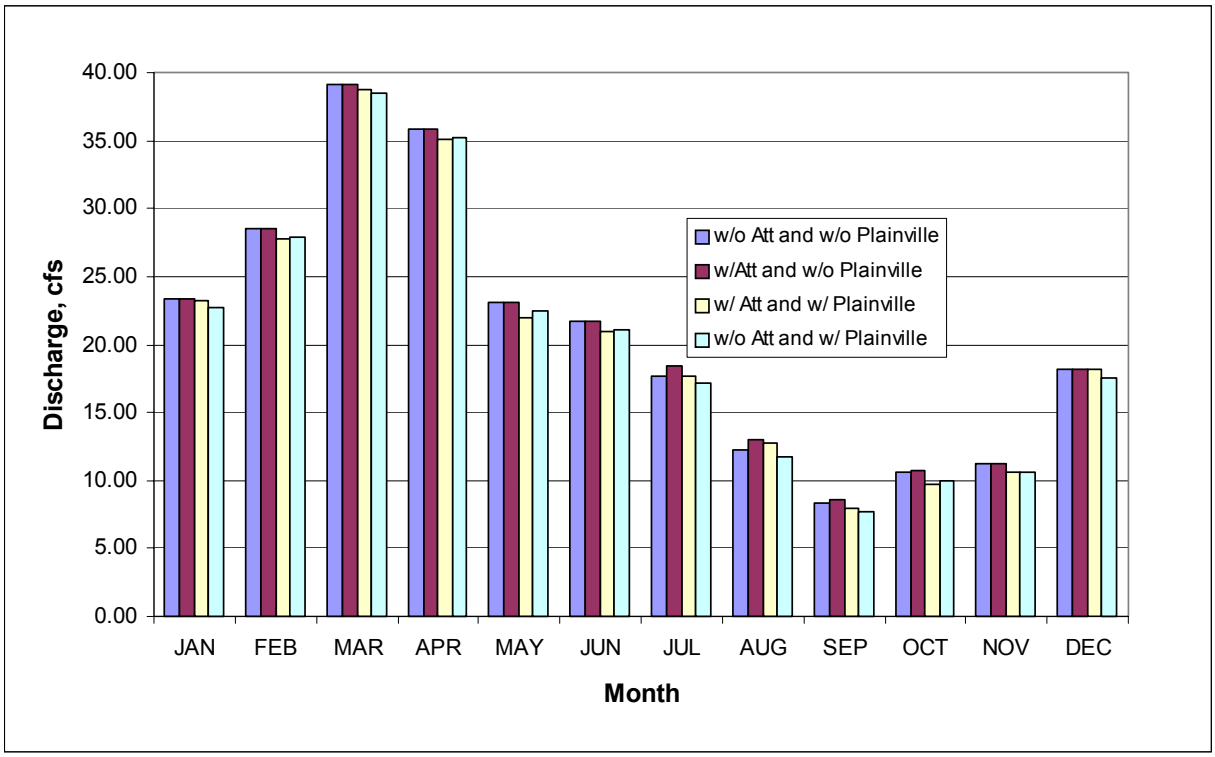
1. Plainville must determine the need to curtail pumping from the Lake Mirimichi wells either by monitoring water levels in Lake Mirimichi once a week (or more frequently) during the months of January through April or by obtaining weekly water levels from Attleboro.
2. During the months of May through December, Plainville must monitor water levels in Lake Mirimichi daily, or establish communication with Attleboro, which will provide Plainville notice that the City will begin to release flow to the Wading River. If Attleboro is releasing flow to the Wading River through its valve at the Lake Mirimichi dam, daily water level monitoring is required.
3. Daily lake level monitoring must be instituted whenever Lake Mirimichi levels decline to 1.5 feet or more below the top of the dam.
4. Plainville must develop a plan, to be approved by DEP and WRC staff for the monitoring requirements in the conditions above. This monitoring plan must be submitted and approved before Plainville can begin to use the wellfield.
5. Plainville shall implement increased water conservation measures and reduce wellfield pumpage when Lake Mirimichi levels reach 1.75 feet or more below the top of the dam.
6. When Lake Mirimichi levels reach 2.0 feet below the top of the dam, Plainville shall cease pumping until Lake Mirimichi levels recover to 1.5 feet below the top of the dam. After Lake Mirimichi levels recover to less than 1.5 feet below the top of the dam, pumping may resume with daily or weekly water level monitoring (depending on the time of the year);
7. These threshold level elevations must be surveyed in to serve as permanent reference points, in the event that modifications to the dam occur in the future. The surveyed elevations must established by a licensed surveyor and be proposed and approved in the monitoring plan required under Condition 4 above.
8. Plainville shall maintain records of Lake Mirimichi water levels and daily records of pumping the Lake Mirimichi wells. Data associated with this approval shall be provided annually with Plainville's Annual Statistical Reports to the DEP and to the WRC for review and to verify compliance with these conditions.
9. If Plainville is able to establish communication with Attleboro which will allow the Water Department adequate notice that it intends to release water through the valve at the Lake Mirimichi dam (in accordance with condition 2 above), Plainville may request that the WRC allow weekly lake level monitoring year-round (with the exception of those periods when lake levels reach 1.5 feet or more below the top of the dam, as surveyed in,

or when Attleboro is releasing flow to the Wading River through its valve at the Lake Mirimichi dam). Copies of any agreements entered into with Attleboro should be included with Plainville's request, as well as an amendment to the plan required in Condition 4 under this Criterion.

In order to fully comply with Criterion #7, that the community has adopted or is actively engaged in developing a local water resources management plan.

1. Before the proposed wells are put into operation, Plainville must incorporate the comments received on its Draft Local Water Resources Management Plan from Staff and submit a final plan to the WRC for approval.

Figure 2. Simulated Average Monthly Releases Lake Mirimichi 1990-2001



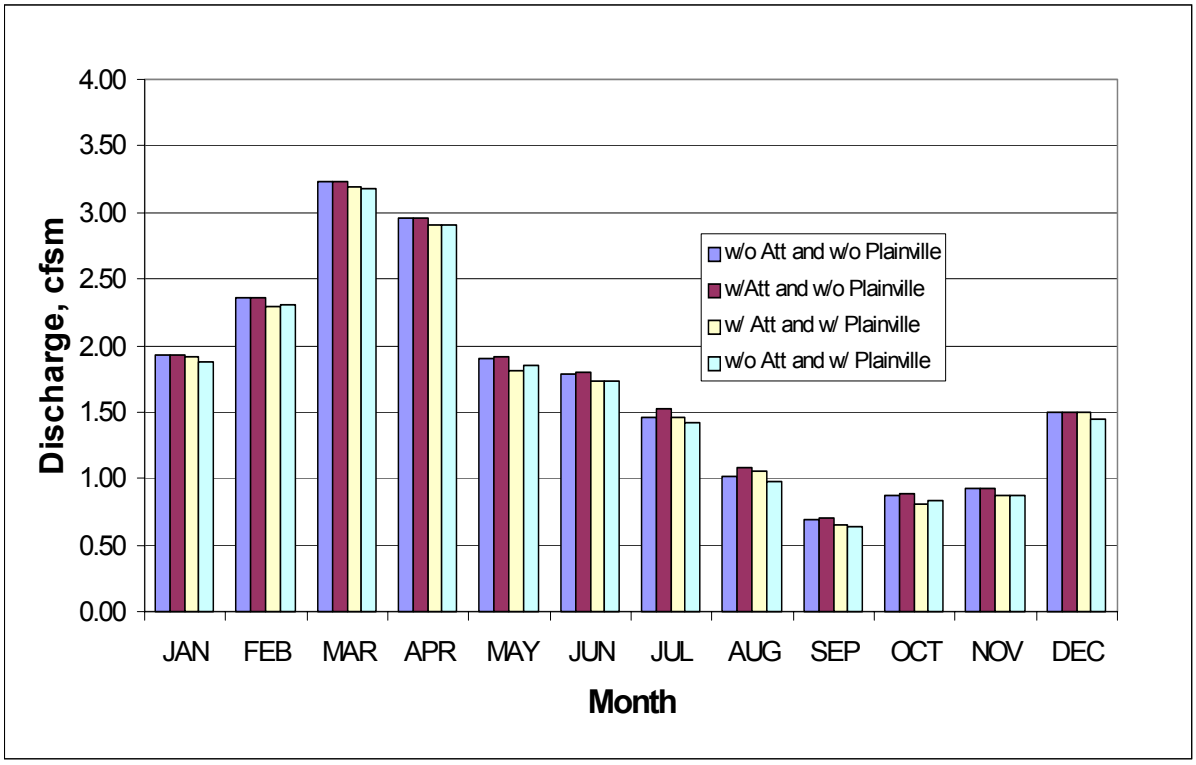
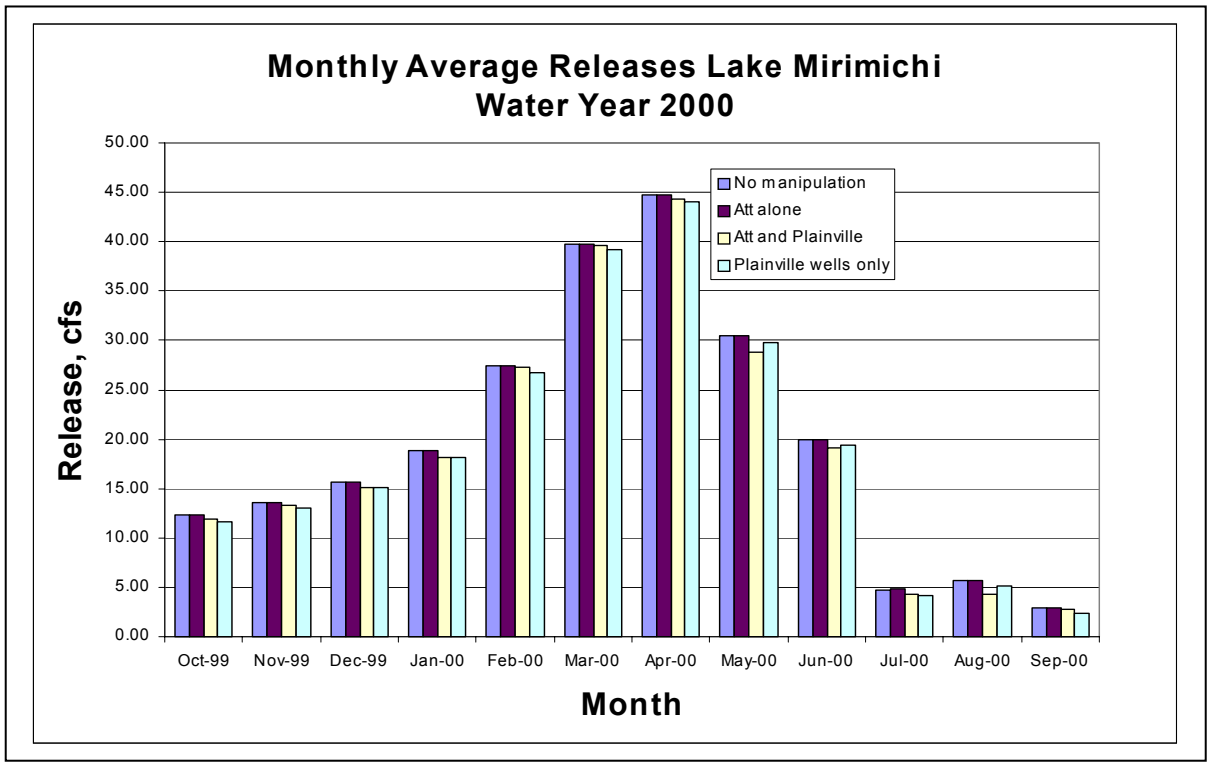


Figure 3. Monthly Average Releases, Lake Mirimichi

Water Years 2000 (Average Conditions) and 1995 (Dry Conditions)



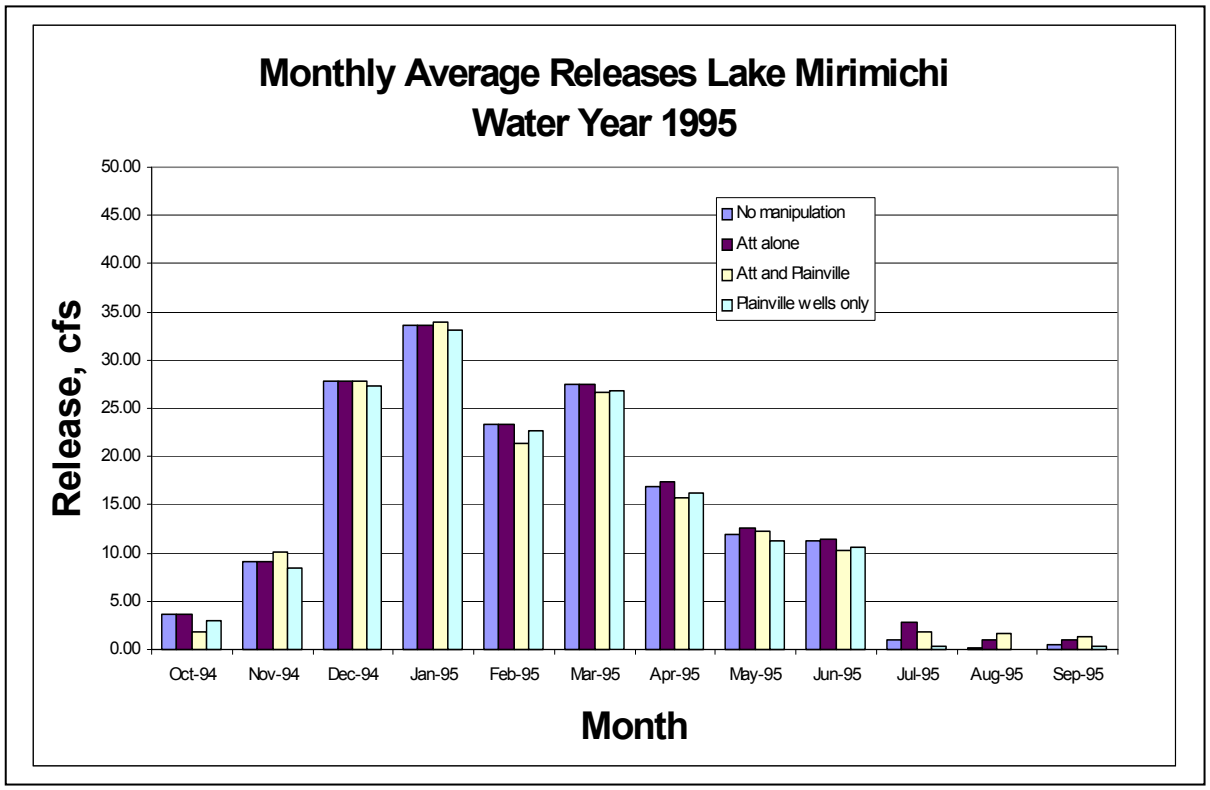
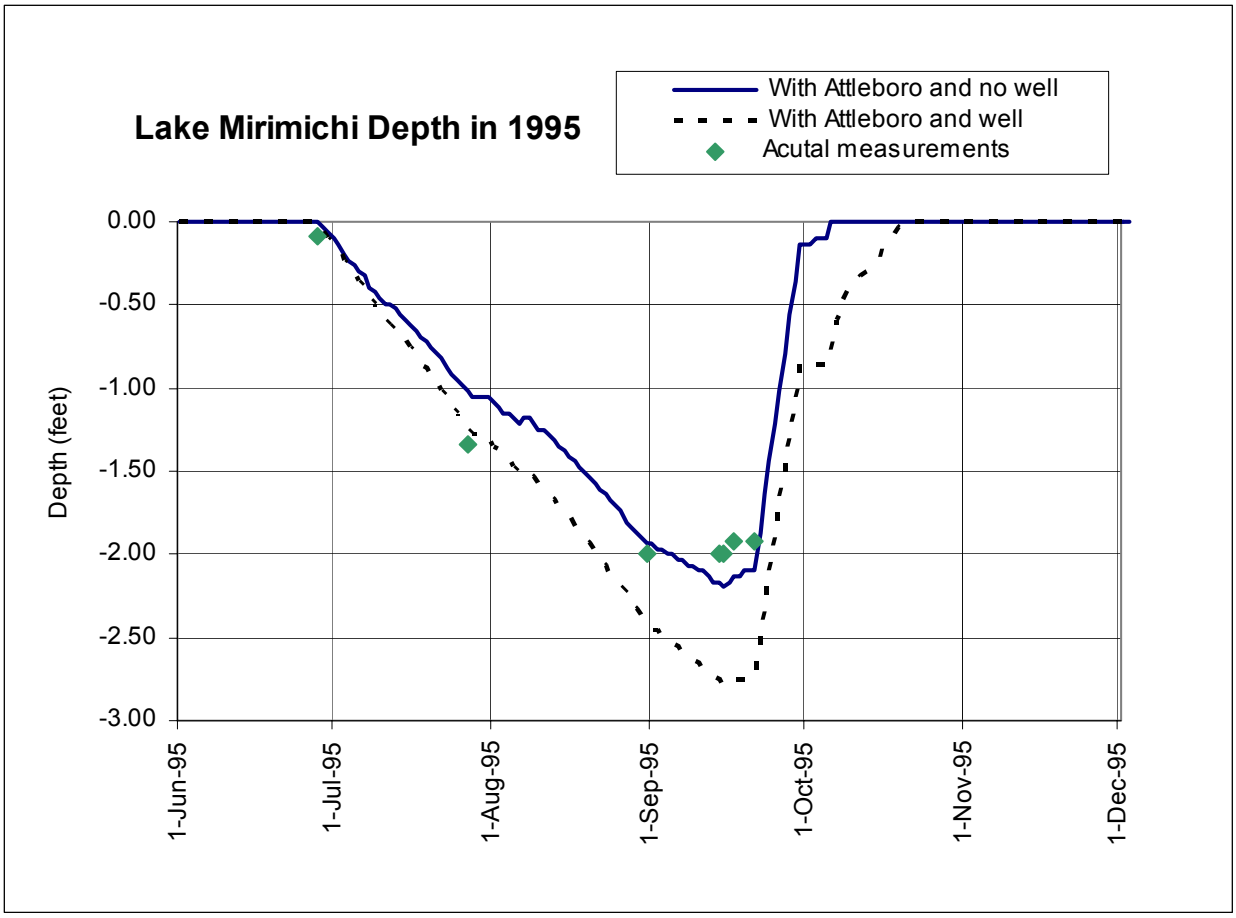


Figure 4. Simulated Lake Mirimichi Depth, Moderate Drought Conditions 1995



ATTACHMENT 1

INTERBASIN TRANSFER ACT
CRITERIA FOR EVALUATING AN APPLICATION BY THE TOWN OF PLAINVILLE TO DEVELOP A WELLFIELD AT LAKE MIRIMICHI

CRITERION #1: An environmental review pursuant to MGL, c. 30, §§ 61 and 62H, inclusive has been complied with for the proposed IBT.

- *The project received MEPA review in 1998 (EOEA #11590). At this time the MEPA regulations did not require an EIR for every "significant" application for Interbasin Transfer review. Therefore, an environmental review, pursuant to Sections 61 & 62H, inclusive, of Chapter 30, was not required for this proposed action. The MEPA program was consulted and confirmed that this is still the case.*

CRITERION #2: All reasonable efforts have been made to identify and develop all viable sources in the receiving area.

The WRC performance standard for a water supply source directs a proponent to discuss the water supply alternatives considered, but rejected. Reason for the rejection of these alternatives should be clearly stated. This information should be included as part of the Local Water Resources Management Plan required under Criterion #7. In addition, as stated in the regulations, a local source must not cause unacceptable environmental damage.

- *Plainville has spent considerable time and money searching within its borders for reliable sources of water supply.*
- *Based on the information available to date, there are no local water supply sources available to the Town.*
- *DEP has concurred with this assessment.*

CRITERION #3: All practical measures to conserve water have been taken in the receiving area...

For a water supply transfer, the WRC performance standards require:

1) A full leak detection survey should have been completed within the previous two years of the application. The proponent should provide documentation regarding repair of leaks identified during the survey. Leak detection surveys should be carried out in accordance with the MWRA's leak detection regulations (360 CMR 12.00).

- *The last survey was conducted in 2002; next survey is scheduled for 2004*
- *Surveys are completed by methods at least as comprehensive as the MWRA's regulations for leak detection*

2) The water supply system should be 100% metered, including public facilities served by the proponent. A program of meter repair and/or replacement must be in place. Documentation of annual calibration of master meters and a description of the calibration program should be included in the application.

- *The water supply system is 100% metered, including public facilities.*
- *A program of meter repair and/or replacement will be facilitated by the program of change over to radio frequency meters, expected to be completed by spring of 2004.*
- *Documentation of annual calibration of master meters and a description of the calibration program was included in the application.*

3) Unaccounted-for water should be 10% or less. The proponent should provide documentation of unaccounted-for water, in both gallons and percentage of the total water pumped and withdrawn, for each of the past five years. The definition of accounted-for and unaccounted-for water for use in Interbasin Transfer applications is given in Appendix C of the Performance Standards. The plan by which the community intends to maintain or reduce this level should be included in the water resources management plan required under Criterion #7.

- *Unaccounted-for water was 7.2% in 2002. However, it was over 10% from 1998 to 2001. The trend has been decreasing from an historic high of 24% in the early 1990's. The trend from 1998 to 2002 has continued to decrease (16.9% in 1998; 14.7% in 1999; 14.8% in 2000; 13.3% in 2001; 7.2% in 2002).*

4) The proponent should provide documentation to show that there are sufficient sources of funding to maintain the system, including covering the costs of operation, proper maintenance, proposed capital improvements, and water conservation. The rate structure must encourage water conservation.

- *Plainville has an Enterprise Account*
- *The Rate Structure ($6.00/1000 gallons) encourages water conservation*
- *Rate Structure is evaluated regularly; the last change was 7-1-2001*

5) The proponent should bill its customers at least quarterly based on actual meter readings. Bills should be easily understandable to the customer (e.g. providing water use in gallons and including comparison of the previous year's use for same period).

- *Currently, large customers are billed monthly; others semi-annually. The changeover to radio frequency meters will allow for quarterly meter reading and billing.*

6) A drought/emergency contingency plan, as described in 313 CMR 4.02, should be in place. This plan should include seasonal use guidelines and measures for voluntary and mandatory water use restrictions and describe how these will be implemented. There should be a mechanism in place to tie water use restrictions to streamflow and/or surface water levels in the affected basin(s) where this information is available. The plan should be part of the Local Water Resources Management Plan required under Criterion #7.

- *Plainville has a written emergency plan and a draft drought plan. The drought plan was adopted in January 2004.*

7) All government and other public buildings under the control of the proponent, should have been retrofit with water saving devices.

- *All public buildings have been retrofit with low-flow devices*

8) Proponents should provide records of water audits conducted on public facilities. The most recent audit should have occurred within two years prior to the application for Interbasin Transfer approval.

- *A water audit is scheduled for July 2004; Plainville conducts informal water audits at each billing cycle. After the meters are read, but before bills are sent out, the billing software identifies volumes that are significantly higher or lower. These meters are then reread to determine if there is a problem.*

9) If the community's residential gallons per capita/day is greater than 65, the proponent should be implementing a comprehensive residential conservation program that seeks to reduce residential water use through a retrofit, rebate or other similarly effective program for encouraging installation of household water saving devices, including faucet aerators, showerheads and toilets and through efforts to reduce excessive outdoor water use.

- *Residential gpcd has averaged 55 over the past five years (Residential gpcd was 56 in 1998; 54 in 1999; 53 in 2000; 55 in 2001; and 56 in 2002).*

10) A broad-based public education program, which attempts to reach every user at least two times per year, through such means as mailings, billboards, newspaper articles, cable television announcements or programs, or the use of other media, should be in place. Water suppliers should refer to the WRC's 1992 "Water Conservation Standards for the

Commonwealth of Massachusetts" and the Massachusetts Water Works Association for recommended public education measures.

- *Plainville sends bill stuffers once per year*
- *PSAs on cable television*
- *A CAC was formed to assist with implementation of conservation programs and outreach*

11) A program which identifies and ranks all commercial, industrial and institutional customers according to amount of use, and requires regular contact with the largest users to promote water conservation, should be in place. The water supplier should make regular contact with these users to promote water conservation. Materials on water reuse and recirculation techniques should be provided, where appropriate.

- *Plainville began a program to target large users in January 2004.*

12) A program of land use controls to protect existing water supply sources of the receiving area that meet the requirements of the Department of Environmental Protection.

- *Plainville is in compliance with DEP's wellhead protection regulations. Documentation from DEP stating this was provided in the application.*

13) As part of the local water resources management plan, there should be a long-term water conservation program, which complies with the 1992 Water Conservation Standards for the Commonwealth of Massachusetts, in place. This plan should reflect the goal of maintaining unaccounted-for at 10% or less of all water used, and of reducing future residential water use through a comprehensive residential water conservation program, if residential gpcd is greater than 65. The water conservation program should also have a goal of operating the system to balance water supply with other environmental needs. If the transfer is approved, the proponent will need to submit a copy of its Public Water Supply Annual Statistical Report (required by DEP) to the Commission annually to demonstrate the continued effectiveness of the program.

- *Plainville's long-term water conservation program complies with the 1992 Water Conservation Standards for the Commonwealth of Massachusetts.*

14) Lawn and Landscape Water Conservation

Communities and public and private water suppliers should develop drought management plans that identify water supply and environmental indicators to serve as drought stage triggers and that outline a set of increasingly stringent water use restrictions that are designed to protect public health and the environment and that can be implemented through bylaw, ordinance or regulation.

- *Plainville's draft drought plan has triggers to reduce pumping and implement water conservation measures tied to the state drought plan triggers.*

Communities and public and private water suppliers should implement a water use restriction bylaw, ordinance or regulation that provides the community or water supplier with the ability to implement mandatory water use restrictions. These restrictions should be tied to environmental and water supply indicators as outlined in a drought management plan.

- *Plainville's by-law provides the community or water supplier with the ability to implement mandatory water use restrictions and issue fines for noncompliance.*

CRITERION #4: A comprehensive forestry management program which balances water yields, wildlife habitat, and natural beauty on watershed lands presently serving the receiving area and under control of the proponent has been implemented.

- *This criterion concerns existing surface water sources. Plainville's existing water supply comes from wells; therefore this criterion is not applicable.*

CRITERION #5: Reasonable instream flow in the river from which the water is transferred is maintained.

- *On a monthly basis, the impact of the proposed Plainville wells will not significantly alter the hydrograph and the ABF values will be maintained;*
- *Impacts to Lake Mirimichi water levels can be controlled by ceasing well withdrawals when the lake reaches threshold levels consistent with those observed during the moderate drought of 1995*

CRITERION #6: The results of the pump test have been used to indicate the potential impacts of this project on other environmental resources and adjacent wells.

- *The pumping test was used to asses the potential impacts of this project on other environmental resources and adjacent wells.*

CRITERION #7: Communities have adopted or are actively engaged in developing a local water resources management plan.

- *A draft local water resources management plan was submitted with the application.*
- *The WRC has furnished comments and suggestions on the draft to the town in order to clarify certain points.*

CRITERION #8: The Commission shall consider the impacts of all past, authorized or proposed transfers in the donor basin.

- *The results of an inflow/outflow analysis conducted by Staff demonstrated that use of the Plainville wellfield, combined with the inflows from the recently approved Mansfield and Foxborough sources, will not increase the stress level of the subbasin.*
- *The storage capacity of Lake Mirimichi and the recommended restrictions on the use of this wellfield will not result in significant cumulative impacts to the subbasin and Taunton River basin as a whole.*

EO 385

- *This decision is consistent with Executive Order 385, which has the dual objective of resource protection and sustainable development. This decision does not encourage growth in areas without adequate infrastructure nor does it cause a loss of environmental quality or resources.*